

REMARKS

Regarding the Claim Amendments:

The amendments to the claims eschew use of the phrase "compounded polymer compositions." Instead the invention is particularly pointed out and distinctly claimed in terms of the language "wherein a) and b) have undergone reaction with one another," which finds support on page 7 of the specification at indicated lines 6 – 16.

New claim 27 finds support in the specification on page 3 at indicated lines 15 – 24, on page 6, at indicated lines 5 – 40, and on page 7, at indicated lines 15 and 16. Claims 24-26 are also new. Claims 11, 13, 16, 19 and 23 were amended to put them in better condition for further prosecution. No new matter has been added.

Regarding previous Claim Rejections:

- I. Claims 11 – 15 stand rejected under 35 U.S.C. §112, first paragraph as allegedly failing to comply with the enablement requirement.

Claims 11-15 stand rejected for allegedly failing to satisfy the enablement prong of 35 USC 112. The Examiner asserts that the recitation in claim 11 stating "constant flow rate" challenges "at least one of the laws of thermodynamics - conservation of energy, for flow through an empty conduit would have a pressure drop associated with it due to friction loss" and accordingly, fail to teach one of ordinary skill in the art how to maintain a constant flow rate (*See*, 17 May 2006 Office Action, page 2). Applicants respectfully disagree.

Applicants respectfully assert that it is common practice in the beverage industry and well known to the one skilled in the art that filtration is performed by at least the following steps:

- a) a filter aid is added to the turbid beverage, usually by continuous dosage;
- b) the turbid beverage with the filter aid is allowed to pass an auxiliary filter. The filter aid and the haze causing particles ("haze") of the

beverage, e.g. yeast cells, settle on the auxiliary filter and form a filter cake.

- c) past the filter yields a clear beverage.

In step b), settling of filter aid and haze on already formed filter cake is a continuous process. Thus, during the filtration, the filter cake is continuously growing in thickness. The thicker the filter cake the higher a resistance to the flow is generated.

Further, Applicants respectfully assert that changes in the flow rate, especially when appearing suddenly, are unwanted as this could lead to a breakage of the filter cake and consequently immediate filtration stoppage. Therefore, the pressure in front of the filter is increased continuously so far that the resistance of the filter cake is compensated for as it grows and the flow rate is kept constant.

This procedure is summarized in, for example, pages 334 to 337 of *Filtration - principles and practices* (Chemical industries; v. 27), M. J. Matteson, C. Orr (eds.), 2nd edition, Marcel Dekker, New York, 1987 (attached hereto). Moreover, methods performing the aforementioned filtration method employing a constant rate are everyday practice in the beverage industry and thus, the one skilled in the art knows how to adjust the pressure to keep the flow rate constant.

Accordingly, claims 11-15 are enabled and Applicants therefore request withdrawal of the 112 rejection.

- II. Claims 15 – 23 stand rejected under 35 U.S.C. §102(b) as allegedly being anticipated by Van Den Eynde (US 6,117,459).

"A claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference."¹ As explained in the previous reply, Van Den Eynde et al. merely address physical mixtures of stabilizing agents and filtration aids. Van Den Eynde et al. do not describe a method wherein polymer powders comprising (a) from 20 to 95% by weight of at least one thermoplastic polymer from the group consisting of polyolefins and polyamides, (b) from

¹ *Verdegaal Bros. v. Union Oil Co. of California*, 814 F.2d 628, 631, 2 USPQ2d 1051, 1053 (Fed. Cir. 1987).

80 to 5% by weight of at least one further substance selected from the group consisting of silicates, carbonates, oxides, silica gel, kieselguhr, diatomaceous earth and crosslinked polyvinylactams, and mixtures thereof perform as filter aids and/or stabilizers for filtering and/or stabilizing an aqueous liquid wherein (a) and (b) have undergone reaction with one another. Thus, claim 11 and claim 15, which depends from claim 11, are not anticipated by Van Den Eynde et al.

Likewise, since the Van Den Eynde et al. reference merely addresses physical mixtures of stabilizing agents and filtration aids, the reference does not set forth a process for filtering and/or stabilizing an aqueous liquid, which comprises using as filter aid or stabilizer a polymer powder comprising a) from 20 to 95% by weight of at least one thermoplastic polymer from the group consisting of polyolefins and polyamides, b) 80 to 5% by weight of at least one further substance selected from the group consisting of silicates, carbonates, oxides, silica gel, kieselguhr, diatomaceous earth, crosslinked polyvinylactams and mixtures thereof, wherein (a) and (b) have undergone reaction with one another. Thus, claim 16 is not anticipated by Van Den Eynde et al. Since claim 16 is not anticipated by Van Den Eynde et al. claims 17 – 23, which depend from claim 16, are not anticipated by Van Den Eynde et al.

- III. Claims 15 – 23 stand rejected under 35 U.S.C. §103(a) as allegedly being obvious over Van Den Eynde (US 6,117,459).

“To establish a *prima facie* case of obviousness, three basic criteria must be met. First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings. Second, there must be a reasonable expectation of success. Finally, the prior art reference (or references when combined) must teach or suggest all the claim limitations.”²

As discussed above, Van Den Eynde et al. merely address physical mixtures of stabilizing agents and filtration aids. Van Den Eynde et al. do not teach or suggest a method wherein polymer powders comprising (a) from 20 to 95% by weight of at least

² MPEP §2143.

one thermoplastic polymer from the group consisting of polyolefins and polyamides, (b) from 80 to 5% by weight of at least one further substance selected from the group consisting of silicates, carbonates, oxides, silica gel, kieselguhr, diatomaceous earth and crosslinked polyvinylactams, and mixtures thereof perform as filter aids and/or stabilizers for filtering and/or stabilizing an aqueous liquid wherein (a) and (b) have undergone reaction with one another. Since Van Den Eynde et al. do not teach or suggest all of the features of claim 11 a *prima facie* case of obviousness has not been established. “If an independent claim is nonobvious under 35 U.S.C. 103, then any claim depending therefrom is nonobvious.”³ Claim 15 depends from claim 11, and thus, is not obvious over Van Den Eynde et al.

Likewise, the Van Den Eynde et al. reference does not teach or suggest a process for filtering and/or stabilizing an aqueous liquid, which comprises using a filter aid or stabilizer a polymer powder comprising a) from 20 to 95% by weight of at least one thermoplastic polymer from the group consisting of polyolefins and polyamides, b) 80 to 5% by weight of at least one further substance selected from the group consisting of silicates, carbonates, oxides, silica gel, kieselguhr, diatomaceous earth, crosslinked polyvinylactams and mixtures thereof, wherein (a) and (b) have undergone reaction with one another. Since Van Den Eynde et al. do not teach or suggest all of the features of claim 16 a *prima facie* case of obviousness has not been established. “If an independent claim is nonobvious under 35 U.S.C. 103, then any claim depending therefrom is nonobvious.”⁴ Claims 17 – 23 depend from claim 16, and thus, are not obvious over Van Den Eynde et al.

- IV. Claims 11 – 23 are provisionally rejected under the judicially created doctrine of obviousness-type double patenting as allegedly being unpatentable over claims 1 and 3 – 16 of copending application No. 10/398,179 in view of Van Den Eynde (US 6,117,459).

The Examiner rejected Applicants’ claims under the judicially created doctrine of obviousness-type double patenting as being unpatentable in light of the combination of

³ MPEP §2143.03, citing *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988).

⁴ MPEP §2143.03, citing *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988).

Van Den Eynde and co-pending Application 10/398,179

Applicants herewith submit a terminal disclaimer disclaiming the terminal part of a patent granted on this application which would extend beyond the expiration date of co-pending Application 10/398,179, and agreeing that a patent granted on this application shall be enforceable only for and during such period that the legal title of such patent is the same as the legal title to co-pending Application 10/398,179. Withdrawal of the rejection under the judicially created doctrine of obviousness-type double patenting is therefore respectfully solicited.

Regarding the enclosures:

The following documents are submitted as evidence to show the state of the art at the time the invention was made. Thus, these documents are not required to be submitted in the form of an Information Disclosure Statement. Applicants respectfully urge that these documents.

Please find enclosed:

1. Copies of the following literature, requested by the examiner during the interview of November 11, 2006:
 - a. Der Doppelschneckenextruder: Grundlagen und Anwendungsgebiete [The double-screw extruder: Principles and areas of application], edited by VDI-Gesellschaft Kunststofftechnik, - Düsseldorf: VDI-Verlag, 1995, Chapter 7, and
 - b. Aufbereiten von Polymeren mit neuartigen Eigenschaften [Compounding polymers having novel properties], edited by: VDI-Gesellschaft Kunststofftechnik, -Düsseldorf: VDI-Verlag, 1995, pp. 135ff.
2. To further aid in the examination of claim 27, a copy of the following reference: Donald G. Baird, Polymer processing: principles and design, edited by: Butterworth-Heinemann, Newton, 1995, p. 135ff. Of particular interest are the definitions of the two basic types of mixing (p. 137, left column, lower half) and of compounding (p. 137, right column).

3. Pages 334 to 337 of *Filtration - principles and practices* (Chemical industries; v. 27), M. J. Matteson, C. Orr (eds.), 2nd edition, Marcel Dekker, New York, 1987.

Additionally, please find enclosed the Declaration of Dr. Marianna Pierobon, dated October 18, 2006, comparing the sedimentation behavior of various polymer powders in water.

Also, please find enclosed a Supplemental Declaration by Dr. Marianna Pierobon, dated December 7, 2006, describing how the compound of polystyrene and polyvinylpyrrolidone, designated as compound D in the Declaration dated October 18, 2006, was obtained by a process comprising extrusion and subsequent milling.

The present application is in condition for allowance. Favorable action is solicited.

Respectfully submitted,
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Enclosures (7):

- Declaration of Dr. Marianna Pierobon, dated October 18, 2006;
- Supplemental Declaration by Dr. Marianna Pierobon, dated December 7, 2006;

- Der Doppelschneckenextruder: Grundlagen und Anwendungsgebiete [The double-screw extruder: Principles and areas of application], edited by VDI-Gesellschaft Kunststofftechnik, - Düsseldorf: VDI-Verlag, 1995, Chapter 7;
- Aufbereiten von Polymeren mit neuartigen Eigenschaften [Compounding polymers having novel properties], edited by: VDI-Gesellschaft Kunststofftechnik, -Düsseldorf: VDI-Verlag, 1995, pp. 135ff.; and
- Donald G. Baird, Polymer processing: principles and design, edited by: Butterworth-Heinemann, Newton, 1995, p. 135ff.
- pages 334 to 337 of *Filtration - principles and practices* (Chemical industries; v. 27), M. J. Matteson, C. Orr (eds.), 2nd edition, Marcel Dekker, New York, 1987
- Terminal Disclaimer from September 18, 2006